IN THE UNITED STATES DISTRICT COURT FOR THE
NORTHERN DISTRICT OF OKLAHOMA

W.A. DREW EDMONDSON, in his capacity as ATTORNEY GENERAL OF THE STATE OF OKLAHOMA and OKLAHOMA SECRETARY OF THE ENVIRONMENT, C. MILES TOLBERT in his capacity as the TRUSTEE FOR NATURAL RESOURCES FOR THE STATE OF OKLAHOMA,

Plaintiff,

vs.

TYSON FOODS, INC., et al.,

Defendants.

4:95-CV-003290-TCK-SAJ
(VOLUME I)

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VOLUME I OF THE VIDEO DEPOSITION OF BRIAN MURPHY, Ph.D., produced as a witness on behalf of the Defendants in the above styled and numbered cause, taken on the 25th day of March, 2009, in the City of Tulsa, County of Tulsa, State of Oklahoma, before me, Karla E. Barrow, a Certified Shorthand Reporter, duly certified under and by virtue of the laws of the State of Oklahoma.

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Exhibit 30

A I don't know.

MR. PAGE: I'm going to ask that they be produced as part of the materials in this case that were considered.

MS. COLLINS: To the extent that it exists, we'll look for it. I think the issue is simply that Exponent may have had some sort of engagement letter that they usually use, but we have a letter that we use and that's what was delivered, so there was no purpose for them to have a separate engagement letter. I think that's the difference in -- 01:40:15 01:40:22

MR. PAGE: Are you confident of that explanation?

MS. COLLINS: Yes, I am. 01:40:26

MR. PAGE: You're making that representation as an officer of the court?

MS. COLLINS: Yes, I am. I'm happy to investigate it further to see if there was anything drafted on their side, but -- 01:40:32

Q (By Mr. Page) The engagement letter you have in this case was drafted by whom?

A Well, I think I hear Ms. Collins saying that it was something that Faegre & Benson drafted. I know I have an engagement letter. I'm not sure, as 01:41:09

it. Am I missing something?
Q What by your example that you chose not to use was making Olsen's point more clear rather than showing a flaw?
A That when you have a limited number of analytes, it is possible for an individual PC, PC1, PC2, to be dominated by a single analyte. 01:52:12
Q And how would you use that in your interpretation of source, if at all?
A I'm not sure I would because, you see, the PC1 loading is dominated by carbon, on Page 228, but all the compounds I'm using have carbon in them. 01:52:25
Q So would you read the comment under PC1 there on this example on Page 228, Murphy 228 of this e-mail? 01:53:08
A Only carbon has large positive loading; therefore, if carbon can shown to be related to a source, then samples high in PC1 can be related to this source.
Q So doesn't this exactly -- this example you've got here exactly demonstrate how Olsen is using loadings to relate to a source of contamination? 01:53:14
MS. COLLINS: Object to form.
A Well, if there were only one of these sources that had carbon or was particularly higher in carbon 01:53:29

than the others, then you could make that identification, but that isn't true.

Q (By Mr. Page) But that's what Olsen did, did he not?

A No, I don't think so. 01:54:04

Q Would you read the comment under PC2?

A Only hydrogen has large positive loading; therefore, if hydrogen can be shown to be related to a source, quote, unquote, then samples high in PC2 can be related to this source also, per Olsen 01:54:18 report, top of Page 653. So I'm referencing Olsen for both of these statements.

Q And doesn't your example actually validate on what Olsen says on Page 6-53 of his report?

A No, because I say alcohol, ethyl, has the 01:54:26 highest hydrogen component, but the next highest, benzine, is not related to alcohol at all.

Q But if they were, wouldn't that help identify the source in your example?

A If you -- if you have a source that is a 01:55:02 unique -- has a unique analyte or a couple of analytes or is dominated by a couple of analytes, that will show up in the PC analysis.

Q And looking at the next page, 229, this is again part of this example that you chose not to use 01:55:16

MS. COLLINS: Well, to the extent that that was reviewed or relied upon by Dr. Murphy, I would agree with you; but I will investigate it further to find out what the nature is of the reference in this e-mail. 02:36:24

MR. PAGE: Let's take a break.

VIDEOGRAPHER: We are off the record, 2:36 p.m

(Following a short recess at 2:36 p.m., proceedings continued on the record at 2:42 p.m.) 02:36:28

VIDEOGRAPHER: We are back on the record, 2:42 p.m.

Q (By Mr. Page) Dr. Murphy, would you look at the reply above where we were just looking on the September 24th, the third sentence down, would you read that for the record, please? This is your reply to Stephen Mudge. 02:43:02

A I believe that he did use MCUV input so that the concentration versus loadings is not obvious.

Q Would you explain that comment to me, please, sir? 02:43:11

A MCUV input is the same thing as what we've been calling Z score.

Q Okay.

A Subtracting the mean and dividing by the 02:43:16

where poultry waste was applied, and in saying that, I want to correct my early statement that Randy O'Boyle indicated to me where it was applied on the Cargill growers. He, in fact, did not. It was the poultry houses he identified for me. 03:25:21

Q And so you don't know, when you try to determine a downstream impact, whether or not the litter from those houses had been applied in the same areas those houses are located in?

A I don't know where the litter was applied. 03:25:28

Q In order to determine impact from Cargill operations, which is more important in your opinion, where the litter is land applied or where the chickens are grown?

MS. COLLINS: Object to form. 03:26:05

A They're turkeys, not chickens.

Q Where the poultry is grown?

MS. COLLINS: Same objection.

A Well, if the turkey litter is a source, a significant source, then you'd want to know where it's applied, and look downstream from that. The house, per se, is not a source. 03:26:12

Q It's still released from the house, as far as you're aware of?

A I haven't seen any discussed. 03:26:19

concentration of a contaminant source in order to be able to detect it in your PCA to determine whether it's presenting itself as an identifiable pattern in your PCA?

A You do have to have a detectable concentration in order to use it in your PCA analysis. 04:26:17

Q Do you have to have more than a detectable concentration?

A No, I think you can use it in your PC analysis if you can detect a concentration. 04:26:25

Q And you believe that will show a pattern in the rivers and streams of the IRW as long as it's detectable as it rolled off the edge of the field?

MS. COLLINS: Object to the form.

A Because it's about relationships between different analytes and between different samples. It's not about concentrations, it's about all of the concentrations or analytes. 04:26:32

Q (By Mr. Page) With sufficient dilution, would you still be able to discern those relationships? 04:27:06

MS. COLLINS: Object to form.

A If the analytes in question behaved the same, you would. You could have iron and aluminum at a thousand parts per million, it goes into the stream, it's down to one part per million. If the 04:27:13